



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/902,756	07/12/2001	Nobuyuki Hirayama	862.C2290	9593
5514 7590 05/15/2007 FITZPATRICK CELLA HARPER & SCINTO 30 ROCKEFELLER PLAZA NEW YORK, NY 10112			EXAMINER THOMPSON, JAMES A	
			ART UNIT 2625	PAPER NUMBER
			MAIL DATE 05/15/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

**Office Action Summary**

Application No.

09/902,756

Applicant(s)

HIRAYAMA, NOBUYUKI

Examiner

James A. Thompson

Art Unit

2625

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 22 February 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 10-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 10-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 July 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Continued Examination Under 37 CFR 1.114*

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 22 February 2007 has been entered.

### *Response to Arguments*

2. Applicant's arguments filed 22 February 2007 have been fully considered but they are not persuasive. Examiner agrees with Applicant's argument that Takamura (USPN 6,493,109 B1) does not teach an array of printing elements arranged in correspondence with a *plurality* of corresponding ink supply openings. However, additional art has been discovered which does anticipate the presently amended claims. Accordingly, new prior art rejections are set forth in detail below.

### *Claim Rejections - 35 USC § 102*

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. **Claims 10-22 are rejected under 35 U.S.C. 102(e) as being anticipated by Takizawa (US Patent 6,331,048 B1).**

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

**Regarding claims 10, 18, 21 and 22:** Takizawa discloses an inkjet printhead comprising an inkjet print head substrate (figure 1A of Takizawa) on which is provided a print head assembly (figures 1B-1C of Takizawa). While figures 1A-1C are used in discussing the Background of the Art, figures 1A-1C are also considered proper diagrams of the layout of the inkjet printhead in the first embodiment of the invention set forth in Takizawa (column 7, lines 57-59 of Takizawa). Thus, the relevant portions discussed in the Background of the Art along with the disclosure of the First Embodiment in Takizawa will be used to demonstrate that the First Embodiment set forth in Takizawa anticipates present claims 10, 18, 21 and 22.

Takizawa discloses that the print head assembly comprises: an ink supply opening (figure 1B(502); figure 1C(501); and column 7, lines 59-62 of Takizawa); an array of printing elements (figures 1B-1C(420) of Takizawa) provided along the ink supply opening (as can clearly be seen in figures 1B and 1C of Takizawa) and divided into a plurality of groups of printing elements (*each of the 32 individual printing elements shown in each element 420 in figures 1B-1C of Takizawa*; column 1, lines 44-48; and column 8, lines 38-45 of Takizawa); an array of driving circuits (*the actual circuit elements displayed which make up the 32 individual printing elements shown in each element 420 in figures 1B-1C of Takizawa*; column 1, lines 44-48 of Takizawa) provided along the ink supply opening and arranged to correspond to the printing elements, respectively (*as can clearly be seen in figures 1B-1C of Takizawa*), for driving the corresponding print elements, respectively (column 1, lines 38-48 and column 8, lines 38-45 of Takizawa); a selection circuit (figure 1B-1C(408) of Takizawa) common to the plurality of groups of printing elements of the array for selecting a printing element to be driven in each group (column 1, lines 32-33; column 2, lines 14-27; and column 8, lines 9-11 of Takizawa); and data supply means (figure 1B-1C(403,404) of Takizawa) for supplying driving data to the driving circuits (column 1, lines 25-32 and column 2, lines 5-12 of Takizawa), wherein the selection circuit has common lines through which electrical signals are supplied for driving the plurality of groups of printing elements of the array (figure 1B-1C(416) and column 2, lines 13-18 of Takizawa) by selecting a printing element to be driven in each group (column 1, lines 32-33; column 2, lines 14-27; and column 8, lines 9-11 of Takizawa), and wherein the data supply means comprises a plurality of shift registers (figure 1B(404); figure 1C(404); and column 1, lines 23-26 of Takizawa), the plurality of shift registers are provided at both longitudinal ends of the ink supply opening (*one shift register at far left bottom of figure 1B of Takizawa, other shift register at far right bottom of figure 1C of Takizawa*), and each shift register is arranged to supply driving data to one or more of the driving circuits for driving the corresponding printing elements, of the plurality of

Art Unit: 2625

groups of printing elements (column 1, lines 25-32 and column 2, lines 5-12 of Takizawa), which are closer than non-corresponding printing elements to the shift register (*shift register in figure 1B of Takizawa much closer to its corresponding set of 64 printing elements than the 64 non-corresponding printing elements in figure 1C of Takizawa*).

Further regarding claim 10: The print head substrate of claim 10 is fully embodied within the print head of claim 18.

Further regarding claim 21: Takizawa further discloses an ink tank for storing ink to be supplied to the print head (column 2, line 67 to column 3, line 3 of Takizawa).

Further regarding claim 22: Takizawa further discloses driving data generation means (figure 1B-1C(406) of Takizawa) for generating a data signal for each path of the shift registers (column 1, lines 22-29 of Takizawa).

**Regarding claim 11:** Takizawa discloses that a plurality of printhead assemblies are provided on the substrate (*each of figure 1B of Takizawa and figure 1C of Takizawa are separate printhead assemblies; column 7, line 62 to column 8, line 2 of Takizawa*).

**Regarding claim 12:** Takizawa discloses that the plurality of shift registers receive clock and data signal (column 2, lines 5-12 of Takizawa), and the data supply means further comprises a plurality of latches (figures 1B-1C(403) of Takizawa) for latching output signals from the shift registers (column 2, lines 5-12 of Takizawa), and AND circuits (figures 1B-1C(419) of Takizawa) for deriving a logical product of outputs from the latches and a driving signal (column 1, lines 35-38 of Takizawa).

**Regarding claim 13:** Takizawa discloses that there are two shift registers (figure 1B(404) and figure 1C(404) of Takizawa) arranged at respective ends of the printing element array (*one shift register at far left bottom of figure 1B of Takizawa, other shift register at far right bottom of figure 1C of Takizawa*).

**Regarding claims 14 and 15:** Takizawa discloses that the array of printing elements (figures 1B-1C(420) of Takizawa) extends alongside an ink supply port (figures 1B-1C(502) of Takizawa – *as can be seen from figures 1B and 1C themselves*).

**Regarding claim 16:** Takizawa discloses that said selection circuit is arranged at one end of the printing element array (figure 1B(408) and figure 1C(408) of Takizawa – *each selection circuit arranged at the top end of the printing element array either at the left-top (figure 1B) or the right-top (figure 1C)*).

**Regarding claim 17:** Takizawa discloses that said substrate is a rectangle (*as can be seen in figure 1A of Takizawa*) and the printing element array extends along the length of the rectangle (*each*

Art Unit: 2625

*section of the printing element array is set apart from the other sections lengthwise along the rectangle, as can be seen in figure 1A of Takizawa).*

**Regarding claims 19-20:** Takizawa discloses that the print head is an ink jet print head for printing data by discharging ink, wherein the print head comprises electrothermal transducing means for generating thermal energy to cause ink discharge (column 1, lines 13-26 of Takizawa).

### ***Conclusion***

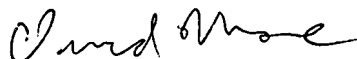
Any inquiry concerning this communication or earlier communications from the examiner should be directed to James A. Thompson whose telephone number is 571-272-7441. The examiner can normally be reached on 8:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David K. Moore can be reached on 571-272-7437. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

James A. Thompson  
Examiner  
Technology Division 2625

JAT  
09 May 2007



**DAVID MOORE**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 2600**